1896MNRAS..57...19.

## *Observation of Comet Perrine*, 1895, IV., *at the Radcliffe Observatory, Oxford.*

(*Communicated by E. J. Stone, Esq., M.A., F.R.S., Radcliffe Observer.*)

The following comet observation was made with the 10-inch Barclay Equatorial, using the ring micrometer, with power 100.

| Date. | G.M.T. | Local Sidereal Time. | Observer. | Comet *minus* Star (corrected for Refraction only). R.A. | Comet *minus* Star (corrected for Refraction only). N.P.D. | No. of Comps. | Apparent R.A. of Comet. | Parallax in R.A. *p*. | Log. $(p \times \Delta)$. | Apparent N.P.D. of Comet. | Parallax in N.P.D. *q*. | Log $(q \times \Delta)$. | Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1896. | h m s | h m s | | m s | ′ ″ | | h m s | s | | ° ′ ″ | ″ | | |
| Feb. 23 | 17 29 34 | 15 38 57 | R. | −0 39·80 | +0 59·4 | 10 | 19 46 33·91 | −0·14 | 9·5079 | 89 38 11·4 | 3·1 | 0 8381 | (*a*) |

### *Observer's Remarks.*

Comet much fainter than Perrine-Lamp (which was observed earlier), but easily seen. Coma 1′ in diameter. Nucleus 11 or 12 magnitude. The comparison star double, components sensibly equal, mag. 8; the second star observed.

Observer: Mr. Robinson.

### *Assumed Place of the Comparison Star.*

| Ref. | Mean R.A. | Reduction to Apparent R.A. | Mean N.P.D. | Reduction to Apparent N.P.D. | Authority. |
|---|---|---|---|---|---|
| | h m s | s | ° ′ ″ | ″ | |
| (*a*) | 19 47 13·75 | −0·04 | 89 36 59·7 | +12·2 | Mean Lalande, 37815; Schjellerup, 7651; Lamont, 22104 |

In the computation of the parallaxes the adopted value of the Sun's mean horizontal parallax is 8″·85; and the geocentric distance, Δ, is taken from the *Astronomische Nachrichten*, No. 3327.

*Radcliffe Observatory, Oxford:* 1896 *November* 13.

1896MNRAS..57...19.

# *Observations of Comets and Planets made with the 15-inch Dunecht Refractor and Wire Micrometer at the Royal Observatory, Blackford Hill, Edinburgh.* By Dr. J. Halm.

(*Communicated by the Astronomer Royal for Scotland.*)

## *Comet* 1896 I.

| 1896 | M.T. Edinburgh. | ☄ ○ } − * Δα. | Δδ. | No. of Comp. | α App. | Log pΔ. | δ App. | Log pΔ. | Reduction to App. Pl. | | No. of Comp. Star. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | h m s | m s | ′ ″ | | h m s | | ° ′ ″ | | s | ″ | |
| Mar. 12 | 9 21 5 | +1 15·01 | −2 1·8 | 18, 6 | 3 1 16·10 | 9·699 | +48 36 27·2 | 0·659 | −0·10 | +17·2 | 1 |
| 15 | 12 14 32 | +0 21·58 | −7 39·1 | 6, 2 | 3 20 59·40 | 9·586 | 47 15 0·4 | 0·856 | +0·06 | +17.1 | 2 |
| 16 | 8 12 6 | −1 35·75 | −0 47·3 | 21, 7 | 3 25 21·86 | 9·649 | 46 54 59·0 | 0·549 | +0·12 | +17·1 | 3 |
| 16 | 8 57 14 | −3 54·34 | −0 59·1 | 12, 4 | 3 25 31·23 | 9·675 | 46 54 12·6 | 0·626 | +0·12 | +17·1 | 4 |
| 17 | 10 52 55 | +3 51·44 | −0 59·0 | 18, 6 | 3 30 44·86 | 9·664 | 46 29 10·2 | 0·782 | +0·11 | +16·8 | 5 |
| 18 | 10 24 49 | +6 18·41 | −7 2·2 | 15, 5 | 3 35 6·97 | 9·673 | 46 7 26·2 | 0·751 | +0·11 | +16·7 | 6 |
| 22 | 8 16 1 | −1 51·57 | −1 22·9 | 21, 7 | 3 49 44·26 | 9·634 | 44 50 30·8 | 0·583 | +0·28 | +16·5 | 7 |
| | | | | | *Comet* 1896 III. | | | | | | |
| Apr. 26 | 10 4 25 | +2 8·62 | +3 52·7 | 15, 5 | 3 18 38·97 | 9·496 | +43 39 49·8 | 0·891 | −0·22 | + 9·8 | 8 |
| 27 | 9 31 25 | +1 31·95 | +3 34·9 | 18, 6 | 3 14 51·87 | 9·558 | 45 51 2·5 | 0·869 | −0·29 | + 9·7 | 9 |
| 29 | 11 1 12 | −0 51·88 | +6 40·7 | 21, 7 | 3 5 48·86 | 9·301 | 50 6 14·5 | 0·913 | −0·45 | + 9·5 | 10 |
| May 9 | 10 18 54 | −6 4·57 | +0 48·4 | 12, 4 | 2 6 7·40 | 9·049 | 63 52 17·8 | 0·882 | −1·42 | + 4·6 | 11 |
| 10 | 10 20 11 | +2 21·32 | +7 59·5 | 18, 6 | 1 59 10·45 | 8·875 | 64 44 16·9 | 0·880 | −1·52 | + 3·2 | 12 |
| 19 | 11 29 46 | −0 32·22 | −2 14·9 | 3, 1 | 0 54 6·47 | 9·764*n* | 69 55 20·4 | 0·794 | −1·86 | − 3·1 | 13 |
| 25 | 12 11 2 | −5 44·69 | −1 46·4 | 15, 5 | 0 11 6·21 | 9·985*n* | 71 38 25·6 | 0·620 | −1·57 | − 6·4 | 14 |
| 29 | 12 55 14 | −6 26·82 | −4 36·0 | 6, 2 | 23 43 0·29 | 0·037*n* | 72 19 12·8 | 0·404 | −1·19 | − 8·0 | 15 |
| 30 | 12 44 25 | +6 33·45 | +6 16·6 | 12, 4 | 23 36 13·19 | 0·040*n* | 72 26 26·8 | 0·412 | −0·93 | − 9·4 | 16 |
| 31 | 11 53 42 | +2 8·84 | −9 39·9 | 18, 6 | 23 29 38·85 | 0·030*n* | 72 32 33·3 | 0·523 | −0·89 | − 9·5 | 17 |

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### Planet (71) Niobe.

| 1896. | | M.T. Edinburgh. | ☄ ○ − ★ Δα. | ☄ ○ − ★ Δδ. | No. of Comp. | α App. | Log pΔ. | δ App. | Log pΔ. | Reduction to App. Pl. | | No. of Comp. Star. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h m s | m s | ′ ″ | | h m s | | ° ′ ″ | | s | ″ | |
| Jan. | 15 | 10 8 19 | +1 45·65 | ... | 24 | 8 54 30·98 | 9·428n | ... | ... | +2·29 | ... | 18 |
| | 20 | 12 0 29 | +2 54·23 | −0 47·0 | 15, 5 | 8 48 27·66 | 8·887n | +25 36 42·3 | 0·651 | +2·39 | −2·5 | 19 |
| | 22 | 9 31 45 | +0 0·21 | −1 44·5 | 12, 4 | 8 46 6·98 | 9·428n | 25 31 11·2 | 0·709 | +2·42 | −2·6 | 20 |
| | 22 | 9 48 49 | +0 33·04 | −6 15·5 | 8, 8 | 8 46 6·50 | 9·395n | 25 31 13·8 | 0·699 | +2·42 | −2·5 | 19 |
| Feb. | 1 | 9 57 40 | +0 33·70 | +6 51·5 | 18, 6 | 8 33 29·98 | 9·224n | 24 55 44·8 | 0·678 | +2·52 | −1·4 | 21 |
| | 2 | 10 40 17 | −0 43·80 | +2 34·1 | 12, 4 | 8 32 12·49 | 8·985n | 24 51 27·4 | 0·664 | +2·53 | −1·4 | 21 |
| | 3 | 8 35 58 | +0 21·88 | −2 18·5 | 18, 6 | 8 31 4·55 | 9·413n | 24 47 30·2 | 0·712 | +2·53 | −1·2 | 22 |
| | 12 | 8 29 41 | −0 32·88 | −0 6·5 | 18, 6 | 8 20 24·82 | 9·321n | 24 3 59·5 | 0·699 | +2·54 | −0·3 | 23 |

### Planet (324)

| 1896. | | M.T. Edinburgh. | Δα. | Δδ. | No. of Comp. | α App. | Log pΔ. | δ App. | Log pΔ. | Reduction to App. Pl. | | No. of Comp. Star. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. | 20 | 10 16 26 | −0 7·12 | −0 52·2 | 6, 6 | 9 0 1·14 | 9·377n | +23 51 29·6 | 0·712 | +2·33 | −3·5 | 24 |
| | 20 | 10 39 17 | −1 3·38 | +6 57·7 | 18, 6 | 9 0 0·46 | 9·321n | 23 51 32·2 | 0·701 | +2·32 | −3·5 | 25 |
| | 22 | 8 55 44 | −2 18·21 | +2 0·0 | 15, 5 | 8 57 50·08 | 9·491n | 23 54 21·8 | 0·750 | +2·36 | −3·5 | 24 |
| Feb. | 1 | 8 22 1 | +0 19·74 | −2 44·9 | 24, 8 | 8 46 30·16 | 9·470n | 24 4 15·8 | 0·740 | +2·51 | −2·5 | 26 |
| | 2 | 10 1 34 | −0 51·95 | −2 12·2 | 15, 5 | 8 45 18·48 | 9·235n | 24 4 48·5 | 0·689 | +2·52 | −2·5 | 26 |
| | 3 | 7 46 9 | −1 52·07 | −1 52·3 | 18, 6 | 8 44 18·37 | 9·501n | 24 5 8·5 | 0·755 | +2·53 | −2·4 | 26 |
| | 10 | 7 18 6 | +0 59·62 | −5 1·7 | 15, 5 | 8 36 53·17 | 9·493n | 24 5 3·8 | 0·751 | +2·56 | −1·5 | 27 |
| | 12 | 8 0 9 | −1 1·69 | −5 58·5 | 18, 6 | 8 34 51·87 | 9·418n | 24 4 7·1 | 0·722 | +2·57 | −1·4 | 27 |
| | 17 | 8 32 50 | −2 28·60 | −3 18·6 | 15, 5 | 8 30 12·47 | 9·283n | 23 59 57·8 | 0·695 | +2·56 | −1·0 | 28 |
| | 18 | 7 56 44 | −3 19·10 | −4 24·3 | 12, 4 | 8 29 21·97 | 9·366n | 23 58 52·2 | 0·714 | +2·56 | −0·9 | 28 |
| | 21 | 8 27 26 | +2 15·32 | +4 47·0 | 18, 6 | 8 26 54·35 | 9·239n | 23 54 48·3 | 0·690 | +2·53 | −0·2 | 29 |

*Planet* ⑶⑺⑴

| 1896. | M.T. Edinburgh. | ○ − * |  | No of Comp. | α App | Log pΔ. | δ App. | Log pΔ | Reduction to App Pl. |  | No of Comp. Star. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Δα. | Δδ. |  |  |  |  |  |  |  |  |
|  | h m s | m s | ′ ″ |  | h m s |  | ° ′ ″ |  | s | ″ |  |
| Jan. 22 | 11 8 46 | +1 7·51 | −6 30·6 | 6, 2 | 9 0 27·08 | 9·172*n* | +11 52 44·7 | 0·794 | +2·14 | − 2·8 | 30 |
| Feb. 1 | 8 55 8 | +0 51·37 | +6 3·7 | 24, 8 | 8 51 8·50 | 9·397*n* | +12 7 28·5 | 0·808 | +2·27 | − 3·0 | 31 |
| 12 | 10 44 40 | −0 25·62 | −1 31·7 | 18, 6 | 8 40 51·66 | 8·587*n* | +12 28 1·6 | 0·783 | +2·34 | − 3·0 | 32 |
|  |  |  |  |  | *Planet* (121) *Hermione.* |  |  |  |  |  |  |
| Feb. 18 | 8 39 11 | +0 5·91 | +5 23·9 | 8, 8 | 10 41 52·50 | 9·491*n* | +18 55 50·7 | 0·789 | +2·49 | −11·0 | 33 |
|  |  |  |  |  | *Planet* ⑥ *Hebe.* |  |  |  |  |  |  |
| June 21 | 11 36 59 | −0 42·39 | +1 29·3 | 18, 6 | 16 27 46·70 | 9·009 | − 0 40 53·4 | 0·866 | +3·23 | −11·7 | 34 |
| 25 | 12 11 41 | +0 55·78 | −7 22·9 | 15, 5 | 16 24 36·01 | 9·236 | − 0 58 2·7 | 0·867 | +3·27 | −11·5 | 35 |
| 26 | 11 56 48 | −4 27·30 | +0 35·7 | 3, 1 | 16 23 52·08 | 9·203 | − 1 2 43·1 | 0·868 | +3·29 | −11·2 | 36 |
|  |  |  |  |  | *Planet* (287) *Nephthys.* |  |  |  |  |  |  |
| July 2 | 11 26 59 | +1 24·20 | +0 45·8 | 18, 6 | 20 19 48·88 | 9·249*n* | −11 19 29·6 | 0·895 | +3·62 | + 5·3 | 37 |
| 12 | 11 34 56 | −1 29·66 | −1 20·8 | 18, 6 | 20 11 44·35 | 9·016*n* | −12 22 1·9 | 0·911 | +3·84 | + 5·9 | 38 |
| 13 | 11 27 46 | +2 22·83 | +3 26·4 | 18, 6 | 20 10 51·22 | 9·030*n* | −12 28 58·3 | 0·911 | +3·86 | + 5·6 | 39 |
| 22 | 10 50 2 | +0 24·54 | +4 51·9 | 18, 6 | 20 2 34·27 | 8·998*n* | −13 36 48·2 | 0·915 | +4·01 | + 5·8 | 40 |
| 27 | 12 6 54 | +2 32·39 | −3 57·0 | 12, 4 | 19 57 53·13 | 8·700 | −14 17 25·2 | 0·918 | +4·07 | + 5·3 | 41 |

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1896MNRAS..57R..23.

### *Planet* ③⑧⑥ 1894 *AY.*

| | | ☄ ○ } − * | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1896. | M.T. Edinburgh. | Δα. | Δδ. | No. of Comp. | α App. | Log *p*Δ. | δ App. | Log *p*Δ. | Reduction to App. Pl. | | No. of Comp. Star. |
| | h m s | m s | ′ ″ | | h m s | | ° ′ ″ | | s | ″ | |
| July 13 | 12 46 6 | +1 1·78 | −5 43·5 | 18, 6 | 21 2 47·39 | 8·830*n* | + 3 34 35·8 | 0·843 | +3·43 | + 8·0 | 42 |
| 27 | 11 14 13 | +2 57·65 | −4 30·7 | 12, 4 | 20 53 42·81 | 9·027*n* | + 2 12 35·9 | 0·852 | +3·68 | + 9·8 | 43 |
| Aug. 24 | 10 44 25 | +1 14·91 | +2 43·6 | 9, 3 | 20 34 0·52 | 8·562 | − 2 31 0·4 | 0·876 | +3·90 | +11·5 | 44 |
| 25 | 9 54 32 | −0 24·23 | +3 59·8 | 18, 6 | 20 33 28·53 | 8·566*n* | − 2 42 32·6 | 0·877 | +3·91 | +11·6 | 45 |

### *Planet* ③⓪④ *Olga.*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug. 24 | 11 24 13 | −0 33·45 | +5 19·0 | 18, 6 | 22 0 49·34 | 8·496*n* | − 7 8 33·4 | 0·895 | +4·08 | +18·4 | 46 |
| 25 | 9 19 8 | −1 1·89 | +1 2·0 | 15, 5 | 22 0 19·24 | 9·290*n* | − 7 26 9·8 | 0·889 | +4·09 | +18·4 | 47 |

### *Planet* ⑥① *Danaë.*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug. 24 | 12 55 19 | −2 47·59 | −6 8·6 | 9, 3 | 22 0 19·78 | 9·022 | −15 14 57·9 | 0·918 | +4·26 | +18·4 | 48 |
| 25 | 10 49 55 | −3 45·74 | −2 59·0 | 12, 4 | 21 59 21·63 | 8·876*n* | −15 11 48·3 | 0·920 | +4·26 | +18·4 | 48 |

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## *Mean Places of Comparison Stars.*

| No. | R.A. 1896·0. | | | Decl. 1896·0. | | | Authority. |
|---|---|---|---|---|---|---|---|
| | h | m | s | ° | ′ | ″ | |
| 1 | 3 | 0 | 1·19 | +48 | 38 | 11·8 | A.G.Z. Bonn. |
| 2 | 3 | 20 | 37·76 | +27 | 22 | 22·4 | „ |
| 3 | 3 | 26 | 57·49 | +46 | 55 | 29·2 | „ |
| 4 | 3 | 29 | 25·45 | +46 | 54 | 54·6 | „ |
| 5 | 3 | 26 | 53·31 | +46 | 29 | 52·4 | „ |
| 6 | 3 | 28 | 48·45 | +46 | 14 | 11·7 | „ |
| 7 | 3 | 51 | 35·55 | +44 | 51 | 37·2 | „ |
| 8 | 3 | 16 | 30·57 | +43 | 35 | 47·3 | „ |
| 9 | 3 | 13 | 20·21 | +45 | 47 | 17·9 | „ |
| 10 | 3 | 6 | 41·19 | +49 | 59 | 24·3 | „ |
| 11 | 2 | 12 | 13·39 | +63 | 51 | 24·8 | A.G.Z. Hels. Gotha. |
| 12 | 1 | 56 | 50·65 | +64 | 36 | 14·2 | „ „ |
| 13 | 0 | 54 | 40·55 | +69 | 57 | 38·4 | A.G.Z. Christiania. |
| 14 | 0 | 16 | 52·47 | +71 | 40 | 18·4 | Bonn, Beob. |
| 15 | 23 | 49 | 28·30 | +72 | 23 | 56·8 | Arg. Oeltzen. |
| 16 | 23 | 29 | 40·67 | +72 | 20 | 19·6 | „ |
| 17 | 23 | 27 | 30·90 | +72 | 42 | 22·7 | Bonn, Beob. |
| 18 | 8 | 52 | 43·04 | +25 | 48 | 58·0 | Lalande. |
| 19 | 8 | 45 | 31·04 | +25 | 37 | 31·8 | Bessel-Weisse. |
| 20 | 8 | 46 | 4·35 | +25 | 32 | 58·3 | „ |
| 21 | 8 | 32 | 53·76 | +24 | 48 | 54·7 | A.G.Z. Berlin B. |
| 22 | 8 | 30 | 40·14 | +24 | 49 | 49·9 | „ „ |
| 23 | 8 | 20 | 55·16 | +24 | 4 | 6·3 | „ „ |
| 24 | 9 | 0 | 5·93 | +23 | 52 | 25·3 | „ „ |
| 25 | 9 | 1 | 1·52 | +23 | 44 | 38·0 | „ „ |
| 26 | 8 | 46 | 7·91 | +24 | 7 | 3·2 | „ „ |
| 27 | 8 | 35 | 50·99 | +24 | 10 | 7·0 | „ „ |
| 28 | 8 | 32 | 38·51 | +24 | 3 | 17·4 | „ „ |
| 29 | 8 | 24 | 36·50 | +23 | 50 | 1·5 | „ „ |
| 30 | 8 | 59 | 17·43 | +11 | 59 | 18·1 | Lalande. |
| 31 | 8 | 50 | 14·86 | +12 | 1 | 27·8 | Bessel-Weisse. |
| 32 | 8 | 41 | 14·94 | +12 | 29 | 36·3 | Lalande. |
| 33 | 10 | 41 | 44·10 | +18 | 50 | 37·8 | A.G.Z. Berlin A. |
| 34 | 16 | 28 | 25·86 | −0 | 42 | 11·0 | Bessel-Weisse. |
| 35 | 16 | 23 | 36·96 | −0 | 50 | 28·3 | Bonn, Beob. |
| 36 | 16 | 28 | 16·09 | −1 | 3 | 7·6 | ½ (Schj. + Gött.). |
| 37 | 20 | 18 | 21·06 | −11 | 20 | 20·7 | Bessel-Weisse. |

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| No. | R.A. 1896·0. | | | Decl 1896·0. | | | Authority. |
|---|---|---|---|---|---|---|---|
| | h | m | s | ° | ′ | ″ | |
| 38 | 20 | 13 | 10·17 | −12 | 20 | 47·0 | Bessel-Weisse. |
| 39 | 20 | 8 | 24·53 | −12 | 32 | 30·3 | Lamont. |
| 40 | 20 | 2 | 5·72 | −13 | 41 | 45·9 | Bessel-Weisse. |
| 41 | 19 | 55 | 16·67 | −14 | 13 | 33·5 | „ |
| 42 | 21 | 1 | 42·18 | + 3 | 40 | 11·3 | A.G.Z. Albany. |
| 43 | 20 | 50 | 41·48 | + 2 | 16 | 56·8 | „ |
| 44 | 20 | 32 | 41·71 | − 2 | 33 | 55·5 | Lamont. |
| 45 | 20 | 33 | 48·85 | − 2 | 46 | 44·0 | Bessel-Weisse. |
| 46 | 22 | 1 | 18·71 | − 7 | 14 | 10·8 | „ |
| 47 | 22 | 1 | 17·04 | − 7 | 27 | 30·2 | „ |
| 48 | 22 | 3 | 3·11 | −15 | 9 | 7·7 | Argel. Zonen. |

### *Notes.*

March 16.—Comet faint; clouds.

March 22.—Comet very faint; moonlight.

April 29.—Comet circular, with nucleus of about 10th magnitude.

May 9.—Observation interrupted by clouds. May 19.—As on May 9.

May 25.—Comet exceedingly faint, scarcely visible. The same for all the following observations of this comet.

May 31.—Possibly the M.T. of this observation is 10 min. too late.

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